

2.5 Factoring Short Cuts**ALWAYS LOOK FOR A COMMON FACTOR FIRST**

Algebra tile short cut

Factor

$10x^2 + 17x + 3$



	$5x$	$1$
$2x$	$10x^2$	$2x$
$3$	$15x$	$3$

$(5x+1)(2x+3)$

Now you try

Factor

$2x^2 + 11x + 12$



	$2x$	$3$
$x$	$2x^2$	$3x$
$4$	$8x$	$12$

$(2x+3)(x+4)$

Sep 27-8:43 AM

MAN short cut

Factor

$3x^2 - 5x - 2$

$(x-2)(3x+1)$

$\frac{M}{-6}$

$\frac{A}{-5}$

$\frac{N}{-6}$

$\frac{1}{3}$  *÷ by # in front of  $x^2$*

↓ Reduce

$\frac{-2}{1}$  *# goes in both brackets*

$\frac{1}{3}$  *# goes in front of +*

Factor

$x^2 - 8x + 12$

$(x-6)(x-2)$

$\frac{M}{+12}$

$\frac{A}{-8}$

$\frac{N}{-6}$

$\frac{-2}{1}$

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Now you try

Factor  
 $6x^2 + 13x - 5$ 

	<u>M</u>	<u>A</u>	<u>N</u>
	-30	+13	15 -2
			$\frac{15}{6}$ $\frac{-2}{6}$
			↓ ↓
			$\frac{5}{2}$ $\frac{-1}{3}$

Reduce

$(2x+5)(3x-1)$

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Factor Fully

ALWAYS LOOK FOR A COMMON FACTOR FIRST

Factor  
 $10x^2 - 22x + 4$ 

Step 1  
factor out CF

Step 2  
factor what is left  
in the brackets  
using the method  
of your choice

\*be sure to leave CF  
out front for your  
final answer\*

	<u>M</u>	<u>A</u>	<u>N</u>
	10	-11	+1 -10
			$\frac{1}{5}$ $\frac{-10}{5}$
			↓ ↓
			$\frac{-1}{5}$ $\frac{-2}{1}$

$= 2(5x^2 - 11x + 2)$

$= 2(5x-1)(x-2)$

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Now you try

Factor

$$3x^2 + 3x - 18$$

$$3(x^2 + x - 6)$$

$$3(x-2)(x+3)$$

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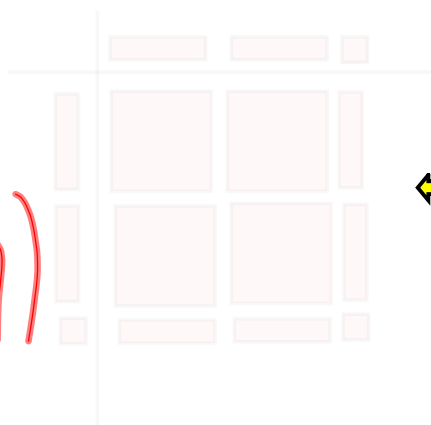
Special CasesPerfect Square

Factor

$$4x^2 + 4x + 1$$

$$\begin{aligned}
 1 \times 1 &= 1 &> (2x+1)(2x+1) \\
 2 \times 2 &= 4 \\
 3 \times 3 &= 9 &= (2x+1)^2 \\
 4 \times 4 &= 16 \\
 5 \times 5 &= 25
 \end{aligned}$$

Picture it:



Sep 28-8:25 AM

Difference of Squares

Factor

$$4x^2 - 1$$

$$(2x+1)(2x-1)$$

$$36x^2 - 16$$

$$(6x-4)(6x+4)$$

$$4(3x-2)(3x+2)$$

$$4(9x^2 - 4)$$

$$4(3x-2)(3x+2)$$

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HMWK

p 110 # 4

p 100 # 9

p 110 # 10, 11, 13 a,c

p 115 #1, 3abcd, 4 5, 11, 12



(note #4c, 11 and 12 would make GREAT test questions)



Feb 24-2:42 PM